ABSTRACT

A method for designing a single loop Sigma Delta Modulator, and a single loop Sigma

Delta Modulator. A microphone comprising the above Sigma Delta Modulator (SDM) and a

5 cellular phone or hearing aid incorporating the microphone. A design algorithm for an SDM is

described said method resulting in a SDM with a maximum SNR for a given NTF order and

the method assures stability while still keeping the distortion in the output signal at a

minimum for signals exceeding MSA. The method further takes the presence of non idealities

in i.e. components into consideration and makes the SDM less sensitive to these non idealities.

10 Furthermore the method tailors the coefficients and the design of the NTF to fit a low power

low voltage integrated circuit implementation.